Skip Over Redundancy Decode with Very Low Overhead

ABSTRACT OF THE DISCLOSURE

The method described uses a Skip-Over technique which requires a set of muxes at the input and output of a block that is to be repaired. The improved method of implementing I/O redundancy control logic has a minimal impact to both chip area and chip wire tracks. To overcome problems of required real estate usage on a chip that was undesirable enables use of odd and even decoder outputs that can share a single wire track, the same wire being utilizable for both odd and even decoder outputs. In order to implement the decode and carry function as a centralized function, there arises a requirement that logically adjacent decode circuits (decoders connected by a carry signal) should be physically close together to minimize the overhead of the carry wiring. If the decode structure and the mux structure are arranged orthogonal to each other, then each decoder output would require a wire track. The described method however, allows odd and even decoder outputs to share the same wire track. This reduces the number of wire tracks from 1 track per I/O to 1 track per 2 I/Os.